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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,306	05/15/2006	Colin McKellar	3700.P0407US	8962
23474 7590 04/28/2009 FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631			EXAMINER NGUYEN, HAU H	
			ART UNIT 2628	PAPER NUMBER
			MAIL DATE 04/28/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/564,306

**Applicant(s)**

MCKELLAR, COLIN

**Examiner**

HAU H. NGUYEN

**Art Unit**

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-16, 23 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-16, 23 and 26-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF-08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The response filed 01/23/2009 has been considered in preparing for this Office Action.

#### *Claim Objections*

1. Claim 29 is objected to because of the following informalities: claim 29 is dependent upon claim 22, which was cancelled. Correction is required. In the following rejection, the examiner assumes claim 29 is dependent on claim 23.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14-16, 23, 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanz-Pastor et al. (U.S. Patent No. 6,747,649, "Sanz-Pastor", hereinafter) in view of Solomon (U.S. Patent No. 6,493,858).

As per claim 14, as shown in Fig. 12, Sanz-Pastor teaches *an apparatus for automatically generating a mipmap chain of texture images from a portion of texture image data for use in texturing a computer graphic image in a tile-based rendering system comprising:*

*means for supplying texture data* (Fig. 12, see col. 12, lines 22-47);

*means for allocating the data into at least one tile* (col. 12, lines 48-55);

*means for storing the data of each tile in a tile buffer* (storing in tile assembly buffer

1206 of Fig. 12, see col. 12, lines 48-65);

*means for filtering the tile buffer contents for each tile in turn to generate at least one lower level of mipmap data from the scene data* (Fig. 14, col. 14, lines 36-61);

*means for temporarily storing each lower level of mipmap data in the tile buffer* (see Fig. 12); and,

Sanz-Pastor fails to explicitly teach *means for storing each lower level of the mipmap data in a system main memory, wherein the filtering means and the temporary storing means generate a predetermined number of mipmap levels to form the mipmap chain of the texture images*. However, Solomon teaches a method for allocating texture data and temporarily storing texture tile in a tile buffer (232, 234, or 236, see Fig. 2, col. 15, line 56 to col. 16, line 4 ), which is also stored in a main memory 104 as shown in Fig. 2. Solomon further teaches the filtering means and the temporary storing means generate a predetermined number of mipmap levels to form the mipmap chain of the texture images (col. 15, lines 1-10, and col. 16, lines 16-33, also Figs. 3, 8, and 9, and their disclosure).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Solomon in combination with the method as taught by Sanz-Pastor in order to increase the speed of processing and display processes (col. 26, lines 39-56).

As per claim 15, as cited above, Sanz-Pastor teaches *the tile buffer is used for temporarily storing image data prior to writing it to a frame buffer* (see Figs. 11a and 12).

As per claim 16, although Sanz-Pastor fails to explicitly teach *the frame buffer comprises a portion of the main memory*. However, it is well known in the art that frame buffer can be allocated in the main memory when a graphics processor does not have its own dedicated

memory, such one as indicated in Solomon where a portion of main memory (included in the view 110) is used to update frame (screen) data (col. 7, lines 8-20).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Solomon in combination with the method as taught by Sanz-Pastor in order to make use of available computer resource (i.e. utilizing a portion of main memory as frame buffer).

Claim 23, which is similar in scope to claim 14, is thus rejected under the same rationale.

As per claim 26, although not taught by Sanz-Pastor, Solomon teaches the filtering means includes a box filter (col. 8, lines 18-26).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Solomon in combination with the method as taught by Sanz-Pastor because box filter requires much less computation, yet still provides acceptable quality (col. 8, lines 18-26).

As per claim 27, although not explicitly taught by Sanz-Pastor, Solomon teaches storing the texture data associated with the image to be shielded in the system main memory before generating the mipmap chain of texture images (storing texture data in main memory before generating mipmap shown in Fig. 9. It should be noted that the limitation "to be shielded" at best understood by the examiner because the specification does not give any definition.)

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Solomon in combination with the method as taught by Sanz-Pastor in order to increase the speed of processing and display processes (col. 26, lines 39-56).

As per claim 28, Sanz-Pastor teaches means for overwriting a preceding level of the mipmap data in the tile buffer with a succeeding level of the mipmap data (i.e. updating texture data in the tile assembly buffer, see Fig. 12, col. 12, line 48 to col. 13, line 20).

Claim 29, which is similar in scope to claim 28, is thus rejected under the same rationale.

***Response to Arguments***

4. Applicant's arguments with respect to claims 14-25 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hau H Nguyen/

Primary Examiner, Art Unit 2628